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PROPOSED AMENDMENT TO THE CLAIMS

Summary of the proposed amendment to the claims:

The amendment to claims 33, 41, 55, 61, and 64 as proposed by Mr. Guill has been approved and accepted by the client.

We believe that the proposed amendment to 62 may appear to lack proper antecedent basis for the element "generating the software simulation model" because it has been recited in the same claim.

33. (Currently Amended) A computer program product that includes a computer usable storage medium, the computer usable storage medium comprising a sequence of instructions which, when executed by [[said ]]a processor, causes said processor to execute a process for performing software performance analysis for a target machine, the process comprising:

describing a system design as a network of logical entities;

selecting at least one of the logical entities for a software implementation;

implementing a source software program for the logical entities selected for the software implementation;

generating an optimized assembler code for the software program, wherein the optimized assembler code is an assembly-language representation of the software implementation;

performing a performance analysis using the optimized assembler code, wherein the act of performing the performance analysis is performed by a processor;

generating a software simulation model in a high level language format based at least in part upon the optimized assembler code by annotating the software simulation model with information related to hardware on which the software implementation runs based at least in part upon a result of the act of performing the performance analysis to capture a dynamic interaction between tasks during runtime, wherein the act of annotating the software simulation

model is performed during a time of the act of generating the software simulation model;

storing the software simulation model on a computer usable storage medium; generating a hardware and software co-simulation model using the software simulation model; and

storing at least the hardware and software co-simulation model on the computer usable storage medium or a second computer usable storage medium or displaying the at least the hardware and software co-simulation model on a display apparatus.

41. (Currently Amended) A computer program product that includes a computer usable storage medium, the medium comprising a sequence of instructions which, when executed by said processor, causes [[said ]]a processor to execute a process for preparing software for a performance estimation, the process comprising:

obtaining a software assembly code module from a source code module, wherein the software assembly code module is an assembly-language representation;

generating a software simulation model in a high level language format, wherein the software assembly code module comprises a binary code, and the act of generating the software simulation model is performed by a processor;

annotating the software simulation model with performance information of hardware together with which the software simulation model runs to capture a dynamic interaction between tasks during runtime, wherein the act of annotating the software simulation model is performed during a time of the act of generating the software simulation model; and

storing at least the simulation model on a computer usable storage medium or displaying the at least the software simulation model on a display apparatus, wherein the software simulation model is an assembler-level software simulation model, expressed in a high-level programming language.

55. (Currently Amended) A computer implemented method of translating an assembly language software module into an assembler-level software simulation model, comprising:

receiving the assembly language software module;

parsing the assembly language software module into a data structure, the data structure comprising one or more nodes, each of the one or more nodes being mapped to a period of time using a mapping definition, each of the one or more nodes containing an element of the assembly language software module;

processing, by using a processor, the data structure to refine accuracy of an assembler-level software simulation model by generating the assembler-level software simulation model based on the assembly language software module by using the assembly language software module, wherein the assembler-level software simulation model is expressed in a high-level programming language and is used to determine a time slot;

associating performance information comprising a predicted execution delay with an element of the assembly language software module to capture a dynamic interaction between tasks during runtime, wherein the act of associating is performed during a time of the act of parsing the assembly language module software into a data structure; and

displaying a result of the assembler-level software simulation model on a display apparatus or storing the result of the assembler-level software simulation model in a computer usable storage medium.

61. (Currently Amended) A system for performing performance analysis for a target machine which comprises a software portion and a hardware portion, comprising:

means for describing a design for the target machine as a network of logical entities;

means for selecting at least one of the logical entities for a software implementation;

means for implementing a source software program for the logical entities selected for the software implementation;

means for generating an optimized assembler code for the software program, wherein the optimized assembler code is an assembly-language representation of the software implementation;

a processor configured for performing a performance analysis using the optimized assembler code;

means for generating a software simulation model in a high level language format based at least in part upon the optimized assembler code by annotating the software simulation model with information related to hardware on which the software implementation runs based at least in part upon an execution result generated by the processor configured for performing the performance analysis to capture a dynamic interaction between tasks during runtime, wherein the means for annotating the software simulation model is invoked during a time when the means for generating the software simulation model executes;

a computer usable storage medium configured for storing the software simulation model;

means for generating a hardware and software co-simulation model using the software simulation model; and

a second computer usable storage medium or the computer usable storage medium configured for storing at least the hardware and software co-simulation model or a display apparatus configured for displaying the at least the hardware and software co-simulation model.

62. (Currently Amended) A system of preparing software for a performance estimation, comprising:

means for obtaining a software assembly code module from a source code module, wherein the software assembly code module is an assembly-language representation;

a processor configured for performing an act of generating a software simulation model in a high level language format, wherein the software assembly code module comprises a binary code;

means for annotating the software simulation model with performance information of hardware together with which the software simulation model runs to capture a dynamic interaction between tasks during runtime, wherein the means for annotating the software simulation model is invoked during a time when the act of ~~means~~ for generating the software simulation model executes; and

a computer usable storage medium configured for storing at least the software simulation model on a computer usable storage medium or displaying the at least the software simulation model on a display apparatus, wherein the software simulation model is an assembler-level software simulation model, expressed in a high-level programming language.

64. (Currently Amended) A computer program product that includes a computer usable storage medium, the medium comprising a sequence of instructions which, when executed by [[said ]]a processor, causes said processor to execute a method for translating an assembly language software module into an assembler-level software simulation model, comprising:

receiving the assembly language software module;

parsing the assembly language software module into a data structure, the data structure comprising one or more nodes, each of the one or more nodes being mapped to a period of time using a mapping definition, each of the one or more nodes containing an element of the assembly language software module;

processing, by using a processor, the data structure to refine accuracy of an assembler-level software simulation model by generating the assembler-level software simulation model based on the assembly language software module by using the assembly language software module, wherein the assembler-level

software simulation model is expressed in a high-level programming language and is used to determine a time slot;

associating performance information comprising a predicted execution delay with an element of the assembly language software module to capture a dynamic interaction between tasks during runtime, wherein the act of associating is performed during a time of the act of parsing the assembly language software into a data structure; and

displaying a result of the act of processing the data structure to refine accuracy of the assembler-level software simulation model on a display apparatus or storing the result in a computer usable storage medium.